

HYDROGEN MANUFACTURE USING PRESSURE SWING REFORMING

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Abstract of the Disclosure

The invention provides a method for generating high pressure hydrogen at improved thermal efficiencies. First a synthesis gas stream at a first pressure is produced in a pressure swing reformer. Next the synthesis gas stream is subjected to a high temperature water gas shift process to produce a hydrogen enriched stream from which high pressure hydrogen is obtained. Specific embodiments of the invention involve: regenerating the reformer at a pressure lower than the synthesis gas generation; operating the synthesis gas generation step at conditions sufficient to provide a syn gas stream at a temperature in the range used in the water gas shift reaction; and using pressure swing adsorption to separate the hydrogen.